

## OFFICE OF GENERAL COUNSEL

May 20, 2003

**RULE 37 CASE No. 0234402**  
**DISTRICT 2**

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**APPLICATION OF EDGE PETROLEUM OPERATING COMPANY, INC. FOR AN EXCEPTION TO STATEWIDE RULE 37 TO DRILL WELL No. 1A ON THE HANLEY HICKS LEASE, O'CONNOR RANCH (FRIO CONSOLIDATED) FIELD, GOLIAD COUNTY, TEXAS.**

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**APPEARANCES:**  
**FOR APPLICANT:**

Mickey Olmstead, Attorney  
Richard Parma, Petroleum Engineer  
Brian Ackman, Geophysicist

**APPLICANT:**

Edge Petroleum Operating Company, Inc.  
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“ ”

**FOR PROTESTANTS:**

William Black, Attorney  
  
James Clark, Petroleum Engineer  
Jerry Dittmar

**PROTESTANT:**

Wells Fargo Bank as Trustee for the Dorothy  
Swickheimer Trust.  
“ ”  
“ ”

Margaret Swickheimer Phelps  
Dick Phelps

Mineral Interest Owner  
“ ”

### PROPOSAL FOR DECISION

### PROCEDURAL HISTORY

**APPLICATION FILED:**  
**NOTICE OF HEARING:**  
**HEARING DATE:**  
**HEARD BY:**

March 21, 2003  
April 29, 2003  
May 13, 2003  
Mark Helmueller - Hearings Examiner  
Donna Chandler - Technical Examiner

**TRANSCRIPT RECEIVED:**  
**PFD CIRCULATION DATE:**

May 19, 2003  
May 20, 2003

### STATEMENT OF THE CASE

Edge Petroleum Operating Company, Inc. (“Applicant” or “Edge”) seeks an exception to Statewide Rule 37 to drill Well No. 1A on the Hanley Hicks Lease in the O’Connor Ranch (Frio Consolidated) Field. The Hanley Hicks Lease is a trapezoidal-shaped 98.042 acre tract. The proposed well will be located 168.4 feet from the western lease line. The proposed well is regular to all other lease line boundaries. A copy of the plat filed with Applicant’s W-1 Application for Permit to Drill, Deepen, Plug Back or Re-Enter is attached. The applied-for field is subject to spacing requirements of 467 feet minimum distance to the nearest lease line and 1200 feet minimum distance between wells.

The application is protested by two unleased undivided mineral interest owners in the adjacent western tract, Wells Fargo Bank as Trustee of the Dorothy Swickheimer Trust (“Wells Fargo”), and Margaret Swickheimer Phelps.

### APPLICANT’S POSITION AND EVIDENCE

Edge claimed that the applied-for well is necessary to prevent waste of a significant volume of hydrocarbons as the proposed well would be the only well capable of producing natural gas from two zones in a fluvial channel deposition environment in the Frio formation. This channel deposition is located in the northwest portion of the Hanley Hicks Lease. 3D seismic imaging was used to identify potentially productive zones in the reservoir. Edge’s geophysical evidence included seismic amplitude maps, cross-sections, a depositional model for fluvial channel systems, and net pay isopach maps. This evidence depicts two zones in the Frio formation. Edge identified a channel deposit approximately 375 feet wide with structural high in the northwest corner of the lease as the Lower Middle Frio objective. The channel deposit borders the western lease line and parallels the lease line in a southerly trend before it meanders to the east, crossing the lease in shallower pay intervals. Edge identified a localized point bar deposit with two structural highs as the Middle Frio objective. The two structural highs straddle the western lease line of the Hanley Hicks Lease, and the isopach map indicates that a well at a regular location would miss the zone.

Edge described the Lower Middle Frio objective as its primary target and presented volumetric evidence estimating that 150 mmcf underlay the Hanley Hicks Lease in that zone. Edge further admitted that this zone is present at regular locations on the Hanley Hicks Lease. However, Edge contended that regular locations are ruled out because: 1) any regular location would be downdip from the exception location; 2) any regular location would encounter a thinner and poorer quality net pay interval; and 3) the downdip, thinner interval completions would be at risk of quickly watering out, as the drive mechanism for many of the Frio reservoirs in the area include a water drive component. Edge noted that it was impossible to predict the drive mechanism in either of the targeted zones, as there was no pattern for the drive mechanisms of Frio reservoirs in the area, but that it was more likely than not that the drive mechanism would include a water drive component.

Edge identified the Middle Frio zone as its secondary target and presented volumetric evidence estimating that 50 mmcf of natural gas underlay the Hanley Hicks Lease in this target reservoir. Edge's isopach maps show that no regular locations exist on any lease which would encounter the Middle Frio objective.

Edge also claimed that an exception to Statewide Rule 37 was necessary to protect its correlative rights. Edge has no other wells on the Hanley Hicks Lease, and wells at a regular location that may hit the Lower Middle Frio objective will miss the Middle Frio objective.

### **PROTESTANTS' POSITION AND EVIDENCE**

Protestant Wells Fargo contended that Edge incorrectly identified the O'Connor Ranch (Frio Consolidated) Field as the proper field for the subject well. Wells Fargo claimed that the proposed well is located over 12 miles from the discovery well and over a mile from the nearest well permitted in the O'Connor Ranch (Frio Consolidated) Field. Wells Fargo urged that Edge be required to file an amended permit application designating all Frio fields in the area as potential targets, and that notice be given in accordance with the new application. Wells Fargo did not identify which Commission field would be the proper field for Edge's proposed well.

Wells Fargo did not contest the technical evidence presented by Edge. However, Wells Fargo argued that the presence of a regular location as depicted on Edge's own isopach maps in the Lower Middle Frio objective, and Edge's admission that a regular location in a depletion drive reservoir would allow it to recover its fair share of reserves from the Lower Middle Frio, undermined the necessity of an exception to prevent waste.

Ms. Swickheimer Phelps contended that a well at the exception location would drain minerals underlying her property. Ms. Phelps also claimed that the presence of a well in such close proximity to the lease line would harm her ability to lease the property.

### **EXAMINERS' OPINION**

An applicant seeking an exception based on waste must establish three elements: 1) that unusual conditions, different from conditions in adjacent parts of the field, exist under the tract for which the exception is sought; 2) that, as a result of these conditions, hydrocarbons will be recovered by the well for which a permit is sought that would not be recovered by any existing well or by additional wells drilled at regular locations; and, 3) that the volume of otherwise unrecoverable hydrocarbons is substantial. The examiners recommend that Edge's application for an exception to Rule 37 to prevent waste be granted. Accordingly, no discussion is necessary concerning Edge's contention that it is also entitled to an exception to protect its correlative rights.

Edge established the presence of unusual subsurface conditions through uncontradicted seismic amplitude studies and net pay maps. This evidence demonstrated that the Lower Middle Frio and Middle Frio target reservoirs are small, highly localized areas. Edge further showed that the Middle Frio objective is only present in the area of the proposed exception location and will not be encountered by wells drilled at regular locations. Additionally, while the Lower Middle Frio objective is present at regular locations, the uncontradicted evidence demonstrated that any regular locations will be downdip from the proposed well, will encounter a thinner, poorer quality pay interval, and will have the potential to water out quickly. Accordingly, the examiners conclude that Edge established the presence of an unusual condition as required for an exception to prevent waste.

With respect to ruling out regular locations, Edge provided testimony that while it could not accurately predict the drive mechanism, that the significant possibility that downdip locations would encounter water in a combination drive reservoir made it necessary to drill the well at the highest structural location on its lease with respect to the Lower Middle Frio objective. Edge pointed to its experience in completing other Frio reservoir wells in the area as the basis for its opinion that the target reservoirs will in all likelihood have a water drive component to their drive mechanism. This evidence was not contradicted by protestants. While Edge admitted that a regular location in a depletion drive reservoir would recover its fair share of reserves, Edge noted that a well at a downdip regular location would not recover any updip reserves if a water drive was present in the reservoir.

While the probability of a water drive component as part of the drive mechanism for the two target zones cannot be quantified, the uncontradicted evidence confirmed the likelihood based on the presence of water drives in other Frio reservoirs in the area. The uncontested evidence also demonstrated that a well at a regular location will not recover any of the reserves in the Middle Frio Zone. Accordingly, Edge has ruled out the possibility that the reserves sought will be recovered by any well drilled at a regular location.

Finally, Edge satisfied the third requirement for an exception to prevent waste based on the estimated additional 200 mmcf of natural gas which would not otherwise be recovered. Reserves of 200 mmcf constitute a substantial volume of additional hydrocarbons. *Gulf Land Co. v. Atlantic Ref. Co.*, 131 S.W.2d 73, 80 (1939).

Wells Fargo's contention that the permit exception may not identify the proper field is not determinative in this case. Review of the field rules for the O'Connor Ranch (Consolidated Frio) Field showed that both the Middle Frio and Lower Middle Frio objectives would be included within the identified interval for the consolidated field. While other Commission recognized fields in the Frio formation are found in the general vicinity of the well, there is no requirement that Edge seek a permit for every Frio field that could potentially be encountered. Further, even if Edge's application identified other Frio fields, once a well is completed in a specific Commission field, the permit for any other Commission recognized field identified in the application is canceled. Finally, Wells Fargo correctly noted the risk that a well at the proposed location may encounter a different Commission recognized field than the field which Edge seeks an exception location. Nonetheless, the risk that the well will encounter a different field is not a basis for a denial of the application.

Edge satisfied all the elements necessary to warrant an exception based on the prevention of waste. The proposed well will recover an additional 200 mmcf of natural gas that no existing or regular well would recover due to the unusual subsurface geology underlying the Hanley Hicks Lease in the O'Connor Ranch (Frio Consolidated) Field. Accordingly, the examiners recommend granting the application.

### **CONCLUSION**

Edge is entitled to an exception to Rule 37 to prevent waste of hydrocarbons underlying its Hanley Hicks Lease in the O'Connor Ranch (Frio Consolidated) Field. Accordingly, the application for an exception to Rule 37 to prevent waste should be granted.

Based on the record in this Docket, the examiners recommend adoption of the following Findings of Fact and Conclusions of Law.

### **FINDINGS OF FACT**

1. Edge Petroleum Operating Company, Inc. ("Applicant" or "Edge") seeks an exception to Statewide Rule 37 to drill Well No. 1A on the Hanley Hicks Lease in the O'Connor Ranch (Frio Consolidated) Field, Goliad County.
2. The Hanley Hicks Lease is a trapezoidal-shaped 98.042 acre tract. The proposed well will be located 168.4 feet from the western lease line. The proposed well is regular to all other lease line boundaries.
3. The O'Connor Ranch (Frio Consolidated) Field is subject to spacing requirements of 467 feet minimum distance to the nearest lease line and 1200 feet minimum distance between wells.
4. The application is protested by two unleased undivided mineral interest owners in the adjacent western tract, Wells Fargo Bank as Trustee of the Dorothy Swickheimer Trust, ("Wells Fargo") and Margaret Swickheimer Phelps.
5. There are unusual geologic conditions underlying the Hanley Hicks Lease in the O'Connor Ranch (Frio Consolidated) Field.
  - (a) Seismic amplitude studies and net pay isopach maps show that the Lower Middle Frio and Middle Frio target reservoirs are small, highly localized reservoirs of natural gas within the designated interval for the O'Connor Ranch (Frio Consolidated) Field.
  - (b) The Middle Frio objective is only present in the area of the proposed exception location and will not be encountered by wells drilled at regular locations.

- (c) The Lower Middle Frio objective is present at regular locations, but any regular locations will be downdip from the proposed well, will encounter a thinner, poorer quality pay interval, and will have the potential to water out quickly.
- 6. Wells at regular locations either on the Hanley Hicks Lease or on any offsetting lease would not recover the natural gas underlying the Hanley Hicks Lease in the O'Connor Ranch (Frio Consolidated) Field.
  - (a) The seismic amplitude studies and net pay isopach maps show that a well at a regular location will miss the Middle Frio zone.
  - (b) The proposed location will encounter a structural high in the Lower Middle Frio zone.
  - (c) Downdip regular locations in thinner and poorer quality pay intervals in the Lower Middle Frio Zone will likely water out quickly as Frio reservoir completions in the area are more likely than not to have a water drive component in the reservoir drive mechanism.
- 7. The proposed well would recover an additional 200 mmcf of natural gas which would not otherwise be recovered. Reserves of 200 mmcf of natural gas constitute a substantial volume of hydrocarbons.

#### CONCLUSIONS OF LAW

- 1. Proper notice of hearing was timely given to all persons legally entitled to notice.
- 2. All things have occurred to give the Commission jurisdiction to decide this matter.
- 3. An exception to Statewide Rule 37 for a well at the applied-for location is necessary to prevent waste in the O'Connor Ranch (Frio Consolidated) Field.

#### RECOMMENDATION

The examiners recommend that Edge's application be granted in the O'Connor Ranch (Frio Consolidated) Field in accordance with the attached final order.

Respectfully submitted,

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Mark J. Helmueller  
Hearings Examiner

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Donna Chandler  
Technical Examiner